

What Is Claimed Is:

1. A device for longitudinal guidance of a motor vehicle, comprising a driver assistance system (10) which outputs a brake request signal to a brake control unit (12), wherein the driver assistance system (10) is designed to output a brake request signal in the form of a distance signal (s_{setpoint}) which specifies the distance to be traveled by the vehicle within which the vehicle is to reach a predefined target velocity (v_z), and the brake control unit (12) has a conversion unit (20) for converting the distance signal into a brake operation signal (P_i).
2. The device as recited in Claim 1, wherein the target velocity (v_z) is predefinable by the driver assistance system (10).
3. The device as recited in Claim 1 or 2, wherein the target velocity (v_z) is zero.
4. The device as recited in any one of the preceding claims, wherein the conversion unit (20) is designed to convert the distance signal (s_{setpoint}) into a setpoint braking deceleration.
5. The device as recited in Claim 4, wherein the conversion unit (20) is designed to generate the brake operation signal (P_i) in such a manner that the braking deceleration of the vehicle is regulated to the setpoint braking deceleration.
6. The device as recited in Claim 4 or 5, wherein the conversion unit (20) is designed to control

the brake pressure acting on the wheel brakes of the vehicle as a function of the setpoint braking deceleration.

7. The device as recited in any one of the preceding claims, wherein the conversion unit (20) is designed to calculate a distance signal (s_{actual} , s_{min}) on the basis of the measured actual braking deceleration (a_{actual}) and the vehicle velocity (v_{actual}) and report it back to the driver assistance system (10) which specifies the predicted distance (s_{actual}) or the minimum distance required (s_{min}) at the maximum achievable braking deceleration until reaching the target velocity.
8. The device as recited in Claim 7, wherein the driver assistance system (10) has a limiting function which limits the possible values for the distance signal (s_{setpoint}) to be output so that this distance signal deviates from the distance signal (s_{min}) reported back by less than a predefined tolerance value (Δ).
9. The device as recited in any one of the preceding claims, wherein the driver assistance system (10) communicates with the brake control unit (12) via a distance interface (14) via which the distance signal (s_{setpoint}) can be output, and via another interface (16) via which another brake request signal (a_{setpoint}) can be output, and the driver assistance system (10) has an interface selector (18) for selecting the interface to be used for output of the brake request signal.
10. The device as recited in Claim, wherein the brake control unit (12) is designed to

generate a corresponding actual signal (a_actual) for the additional brake request signal (a_setpoint) and to report it back to the driver assistance system via the additional interface (16).